

WE CLAIM:

1. An X-ray or neutron system for investigating a sample, the system comprising:

a source for directing a primary beam of radiation onto the sample;
a detector for receiving radiation from the sample;
a beam stop disposed between the sample and said detector, wherein said source, the sample, said beam stop, and said detector are substantially collinear along a z-axis, said beam stop having a cross-sectional shape transverse to said z-axis to intercept said primary beam; and
means, cooperating with said beam stop, for displacing said beam stop along said z-axis for optimal adjustment of amounts of useful and disturbing radiation impinging on said detector.

2. The system of claim 1, wherein said radiation from the sample is X-ray or neutron radiation diffracted or scattered from the sample.
3. The system of claim 1, wherein the system is designed to measure small-angle radiation.
4. The system of claim 3, wherein said small-angle radiation is between 0.1° and 5° .
5. The system of claim 1, wherein said beam stop can be adjusted in an xy-plane, perpendicular to said z-axis.

6. The system of claim 1, wherein said beam stop has a round cross section.
6. The system of claim 1, wherein said beam stop has a circular cross-section.
7. The system of claim 1, wherein said beam stop has a shape similar to a truncated cone.
8. The system of claim 1, wherein said beam stop is formed from a material with good radiation-absorbing properties.
9. The system of claim 1, wherein said material comprises at least one of Au, Sb, Pb, W and Bi.
10. The system of claim 1, wherein said displacing means comprises a motor.
11. The system of claim 10, wherein the system can be automatically adjusted in accordance with predetermined criteria.
12. The system of claim 1, wherein a surface of said beam stop facing said primary beam is concave.
13. The system of claim 1, wherein said the detector is a one-element detector (zero-dimensional detector) which can scan a defined angular region about said z-axis.
14. The system of claim 1, wherein said detector is a one-dimensional detector.

15. The system of claim 1, wherein said detector is a two-dimensional area detector, wherein a detector surface is disposed substantially perpendicular to said z-axis.